ACA BRANCH NEW ZEALAND BRANCH

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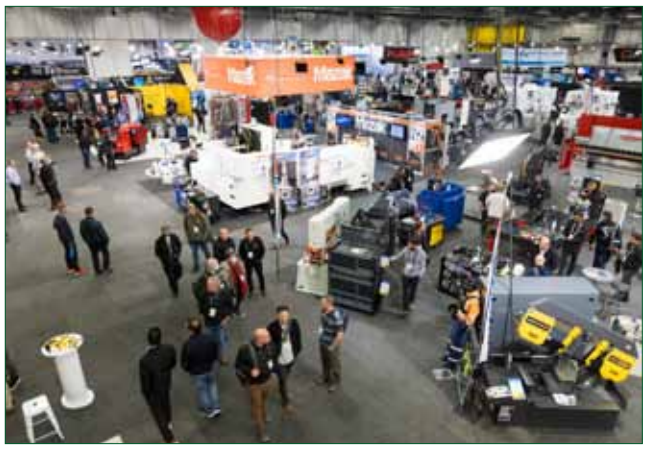
EMEX 2024 IN AUCKLAND



The Engineering and Manufacturing Exhibition, EMEX, was held from 28-30 May 2024 at the Epsom Showground in Auckland. This year EMEX brought together more than 210 local and international exhibiting suppliers including a dedicated international pavilion that housed a number of suppliers attending from India.

The show highlighted the latest innovations and new products across robotics, AI, machinery solutions, automation, additive manufacturing and new engineering materials. There was also a continuous daily offering of Seminars that introduced attendees to expert speakers on the hottest topics, such as the digital manufacturing challenge and Industry 4.0 (also called the 4th Industrial Revolution).

Along with the wide range of exhibitors were several ACA Members displaying their products and services. Metal Spray Supplies (MSS) and SynTech (surface finishing specialists) had prominent display locations and were kept busy showing attendees their latest products for corrosion control. Prominent also were several stands exhibiting additive manufacturing (aka 3D-printing) solutions for real-world parts manufacturing, including titanium, stainless steel and nickel alloys.

EMEX was a great opportunity to meet and talk to many experts at the one location on how new products and services are being introduced into the New Zealand market.

from Les Boulton: *See pics on page 2*

ACANZ would like to gratefully acknowledge this month's sponsor…

EMEX 2024 in Auckland - *continued*

ACA Member Matt Vercoe on the MSS stand

ACA Members SynTech staff on their stand

High quality stainless steel componentry manufactured for compressed gas containment

Complex titanium metal parts manufactured by additive manufacturing (3D-printing).

Q & A CORNER

Older ACA NZ members have probably seen a number of situations that may never have made it to a textbook.

If you have a question you'd like clarification on, email it to the Editor at lesboultonrust@gmail.com. We'll pose it to our panel of experts who will answer it in another Bulletin, so everyone can improve their knowledge.

Q:

Are bolted systems prone to corrosion?

& A:

They can be

The performance of a steel assembly may be determined by the vulnerability of its smallest and least considered components – the fasteners, often bolts, holding the structure together. Bolted connections are often where corrosion starts first and where the effects of corrosion may have the most serious consequences. Differences in corrosion potentials of metals, relative sizes, mixed materials, damage to protective coatings, and crevices formed between components, are all well understood factors affecting corrosion, but these factors are sometimes overlooked in practice.

The picture shows how the design and construction of a bolted assembly can create an unnecessary corrosion problem. The image shows a section of pipework constructed from alloy steels, namely a high-alloy flange connected using uncoated steel bolts and nuts. The bolts and nuts have corroded when connected to the high-alloy flange. In addition to the potential difference between the bolts and flange, the bolts are much smaller in size, a factor that exacerbates the galvanic corrosion effect. A small anode (bolt) corrodes faster when in contact with a large cathode (flange).

There are some "remedies" for corrosion already occurring on a bolted assembly:

1) Do nothing. This is not a good option and it could result in a failure.

2) Take everything apart; clean, recoat, replace and re-assemble the affected areas. Not a very practical option but it works if carried out well. This is an expensive option.

3) A better way to protect fastener connections from corrosion during service is to factor in likely corrosion impacts at the original design stage.

This can be accomplished by considering the application for which the fasteners will be used, as well as the environment in which they will be exposed during service. If the budget permits, it may be best to specify high alloy, corrosion-resistant fasteners such as stainless steel, at the design stage of the project.

Acknowledgment: www.corrosionpedia.com

ACA APPLICATOR AND COATINGS ROADSHOW now postponed to 2025

Venues with amended dates for these all-day events have now been changed again. AUCKLAND DATE is now **Monday, 21 July 2025** and CHRISTCHURCH will be **Thursday 24 July 2025.** Venues will hopefully remain the same.

More details will be confirmed in a few weeks' time, but meantime save these dates into your calendars and contact Rachelle.Rigby@corrosion.com.au if you would be interested in being involved as an exhibitor, sponsor and/or speaker.

from Willie Mandeno

TICKETS NOW ON SALE!

Visit https://www.corrosion.com.au/conference/tickets/

CORROSION & PREVENTION CAIRNS 2024

NAVIGATING CORROSION CHALLENGES IN MARINE and COASTAL ENVIRONMENTS

10 – 14 November 2024

Cairns Convention Centre *(Main Conference)*
corner Sheridan and Wharf Streets

Join us at C&P 2024 as we navigate all things corrosion!

Cairns is a unique city located on the north-east coast of Australia, and is home to the world heritage-listed Great Barrier Reef and wet tropics rainforests.

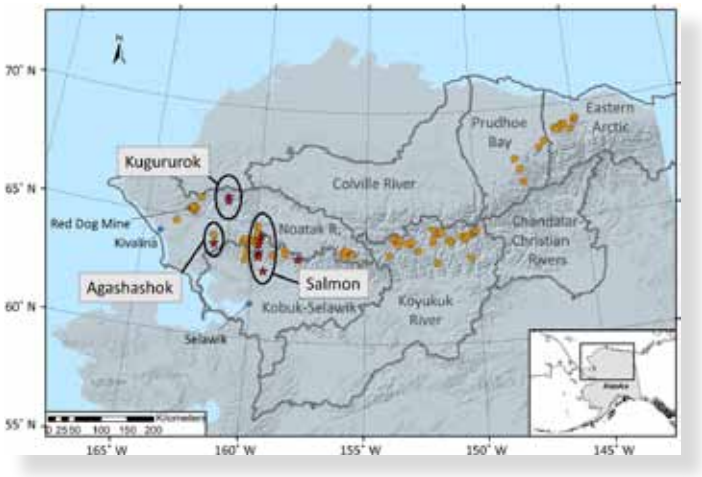
The Cairns Marine Precinct, which the Australian Government has committed $180 million towards, is on track to begin later this year. This is expected to create 460 construction jobs while delivering a 5,000-tonne ship-lift, three ship hardstand areas and other components – which will support bigger ships and contracts coming in, underpinning more revenue and local jobs.

Corrosion & Prevention 2024 will feature a full program of peer-reviewed papers and case studies, technical forums, research symposium, networking and more. The conference will be a platform for industry field practitioners who combat corrosion on a daily basis and researchers working in corrosion-related fields to share and exchange ideas.

The Australasian Corrosion Association Inc. acknowledges the traditional owners and custodians of country throughout Australia and acknowledges their continuing connection to land, waters and community. We pay our respects to the people, the cultures and the elders past, present and emerging.

Alaska's Rusting Rivers

Dozens of Alaska's most remote rivers in the Brooks Range, an area the size of Texas, are turning from clear blue into a cloudy orange – the colour of red rust.



The staining of the rivers and streams could be the result of minerals exposed by thawing permafrost (frozen ground) a phenomenon that was first observed in 2008. Research has been in progress since 2018 on the cause of the colour change of the impaired river waters which could have implications for drinking water supplies and fisheries in the Arctic watersheds.

The stained rivers are so big that they can be seen from space according to the researchers. One hypothesis is that the permafrost stores minerals and as the climate warmed the metal ores that were once locked underground were now exposed to water and oxygen resulting in the release of acid and minerals. Some samples from the impaired waters have a pH of 2 compared to the average pH of 8 for these rivers.

This means the sulphide minerals are weathering resulting in acidic and corrosive conditions that release additional minerals. Elevated or high levels of iron, zinc, nickel, copper and cadmium have been measured. The researchers believe it is the high levels of iron that form red iron oxide floc in the river waters which is causing the water colour change.

The researchers are in the second year of a multi-year grant aimed at understanding what is happening in the river waters, modelling what other areas may be at risk and assessing implications for drinking water and fishing stocks. More work is needed to better understand the problem and whether the remote rivers and streams can rebound, perhaps after cold weather promotes permafrost recovery.

Acknowledgment: National Park Service US Geological Survey

Coating Inspector Kit with Elcometer

Advertorial

Elevate Your Coating Inspection Game with the Elcometer Protective Coating Inspection Kit!

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MORE TRAINING OPPORTUNITIES IN NEW ZEALAND

Coating Inspector Programme

CIP1 | NZ | 8-13 Jul 2024 OR 22-27Jul 2024 Level 1

This is the first step on the Coatings Inspector ladder. This foundation course delivers all the basics to start your paint inspector journey. This course is now fully booked, but to be waitlisted and for more details of the course contents, go to: https://www.corrosion.com.au/training/training-course-schedule/ and follow the promts.

CIP2 | NZ | 15-19 July Level 2

This course is the next step in earning the Certified Coatings Inspector Certification. For more details and to reegister, go to: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/ampp-coating-inspector-program-level-2-or-nz-or-15-20-jul-2024-4a2ZI71VVw/overview

ACA ACRA Corrosion & Protection of Concrete Structures & Buildings

ACRA | NZST | 25-26 Jul 2024

This course covers the mechanisms of corrosion, protection and repair of reinforced concrete structurers and buildings. For more details and to register, go to: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/aca-acra-concrete-structures-and-buildings-or-nzst-or-25-26-jul-2024-4a2ZI71kEw/overview

AMPP Cathodic Protection

CP1 | NZ | 14-18 Oct 2024 Level 1 Tester

This course is the first of AMPP's Cathodic Protection series, covering both theoretical and practical CP techniques. For more details and to reghister, go to: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/ampp-cathodic-protection-level-1-tester-or-nz-or-14-18-oct-2024-4a2ZI7235y/overview

CP2 | NZ | 21-25 Oct 2024 Level 2 Technician

This certification indicates intermediate-level knowledge of corrosion theory and CP concepts, types of CP systems, and advanced field measurement techniques. For more details and to reghister, go to: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/ampp-cathodic-protection-level-2-technician-or-nz-or-21-25-oct-2024-4a2ZI7236D/overview

ACA Coating Selection & Specification

CSS | NZST | 21-23 Oct 2024

This course addresses the guidelines for writing paint coating specifications that are fit for purpose. For more details and to register, go to: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/aca-coating-selection-and-specification-or-nzst-or-21-23-oct-2024-4a2ZI7236S/overviewACA

ACA Corrosion Technology Course

CTC | NZ | 25-29 Nov 2024

This is a great foundation course for all corrosion professionals. For more details and to register, go to: https://events.blackthorn.io/en/5j1hxgo7/g/3VggT5Fffm/aca-corrosion-technology-course-or-nz-or-25-29-nov-2024-4a2ZI71kFV/overview